

Date: Monday, 10/03/2008 12:49:42 PM
 User: Linda Lacelle

Process Sheet

Customer	: CC-DAR01 Dart Aerospace Ltd.		Drawing Name	: D412-664-205		
Job Number	: 37701		Part Number	: D412664205		
Estimate Number	: 10804		Drawing Number	: REWORK/RTN FROM HAI		
P.O. Number	:		Project Number	:		
This Issue	: 10/03/2008	S.O. No. :	Drawing Revision	:		
Prsht Rev.	: NC		Material	:		
First Issue	: 10/03/2008	Type : LANDING GEAR	Due Date	: 17/03/2008	Qty:	1 Um: Each
Previous Run	: 00015					
Written By	:					
Checked & Approved By	:					
Comment	:					

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1	
	Comment: LANDING GEAR RESOURCE 1		
	REMOVE FROM HAI STOCK: 1 X D412-664-205 B37023 CHG001		
2.0	D412664205	CROSSTUBE, LOW NARROW AFT, 412CF	
	Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s) CROSSTUBE AINSTALLATION B/N 37023		
3.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1	
	Comment: LANDING GEAR RESOURCE 1		
	STRIP TUBE OF PARTS AND PAINT		
	KEEP ORIGINAL PARTS TO RE-ASSEMBLE		
4.0	OUTSIDE SERV.10	OUTSIDE SERVICES -LG	
	Comment: Sub-Contracting OUTSIDE SERVICES -LG Liquid Penetrant Inspection as per QSI 0380r Issue P/O: 5868 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order		

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Job Number: 37701

Part Number: D412664205

Job Number:



Seq. #:	Machine Or Operation:	Description :
5.0	PACKAGING 1	PACKAGING RESOURCE #1
		Comment: PACKAGING RESOURCE #1 Inspect for transit damage Ensure copy of NDT results attached to work order. <i>Per 8/3/08 (1)</i>
6.0	QC5	INSPECT WORK TO CURRENT STEP
		Comment: Inspect for damage & ensure results are as per Dwg D412-664-203 <i>8/08/08 (1)</i>
7.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
		Comment: LANDING GEAR RESOURCE 1 1-Rivet Cuffs as per Dwg D412-6647-245, with Sika flex in Between tube & Cuff A/R SIKAFLEX -241/-291 BATCH: _____ <i>NA</i>
8.0	CR3212407	CHERRY RIVET
		Comment: Qty.: 44.0000 Each(s)/Unit Total : 44.0000 Each(s) CHERRY RIVET Batch: _____ <i>NA</i>
9.0	SPRAY PAINTING	SPRAY PAINTING
		Comment: SPRAY PAINTING 1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2 <i>8/08/08 (1)</i>
10.0	QC14	INSPECT SPRAY PAINT
		Comment: Inspect Spray Paint Wrap in plastic bag to protect from scratches <i>8/08/08 (1)</i>

W/O:		WORK ORDER CHANGES					
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Process Sheet

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Drawing Name: D412-664-205

Job Number: 37701

Part Number: D412664205

Job Number:



Seq. #:	Machine Or Operation:	Description :
11.0	D31891	Chafing Shield
12.0	D3595	Rubber Cushion (per sq ft)
13.0	D28961	Support
14.0	D2856600	Abrasion Strip
15.0	MS2192028	Clamp(per MIL-DTL-8783C)
16.0	MS2192030	clamp(per MIL-DTL-8783C)

W/O:		WORK ORDER CHANGES					
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NOTE: Date & initial all entries

Date: Monday, 10/03/2008 12:49:43 PM
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Process Sheet

Customer: CC-DAR01 Dart Aerospace Ltd.

Drawing Name: D412-664-205

Job Number: 37701

Part Number: D412664205

Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Assemble as per Dwg D412-664-245

Install Chaffing Shields

Instal support with magnobond 6398 per dwg D412-664-245,
cure for 12hrs before packaging.

BT 08-03-19

Time & date of application: 08 03 - 19 11-08

Batch: 106695

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

3 08/03/20 00

19.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

20.0

AN640A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: M107008

2

21.0

AN641A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch: M107427

2

22.0

MS21042L6

Nut



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

Nut

Batch: M105077

2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: Date: 03/04
 QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

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Drawing Name: D412-664-205

Job Number: 37701

Part Number: D412664205

Job Number:



Seq. #: Machine Or Operation:

Description :

23.0 AN960JD616 Washer



Comment: Qty.: 18.0000 Each(s)/Unit Total: 18.0000 Each(s)

Washer

Batch: M1-6883

1X

M1-6882 1X 8/3/2008

24.0 QC4 INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

25.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Identify and pack for shipping as per PPP D412-664-205

CHG 004

8/3/20 SD 1X

26.0 QC21 FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



8/03/24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D412-664-245	
DATE		REV. C SHEET 1 OF 3	
07.03.29		TITLE CROSSTUBE ASS'Y (412 LOW-N AFT) NTS	
A	06.12.01	SCALE	
B	07.03.01	CHG CUFF AREA, CHG RUBBER CUSHION	
C	07.03.29	CHG RIVET AND RUBBER CUSHION	

RELEASED

07.04.24

PARTS LIST:

Qty	Part Number	Description
X	D412-664-245	CROSSTUBE ASSEMBLY (412 LOW-NARROW AFT)
1	D6009-129	CROSSTUBE
2	D2856-600-1009	ABRASION STRIP
1	D2896-1	SUPPORT
2	D3189-1	CHAFING SHIELD
2	D3595-063-570	RUBBER CUSHION
2	D3606-1	CUFF
44	CR3212-4-07	RIVET (OR M7885/3-4-07)
4	MS21920-28	CLAMP
2	MS21920-30	CLAMP (OR MS21920-32)
A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6009-129
FINISHED LENGTH = 123.59 ± 0.020 (BEFORE BENDING/TRIMMING)
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2856-600-1009 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2896-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-30 CLAMPS (OR -32) WITH D3595-063-570 RUBBER CUSHIONS TO SECURE D2896-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 14) INSTALL D3606-1 CUDD AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUDD AND CROSSTUBE. SEAL EDGE OF CUDD TO ENSURE NO GAPS.
- 15) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

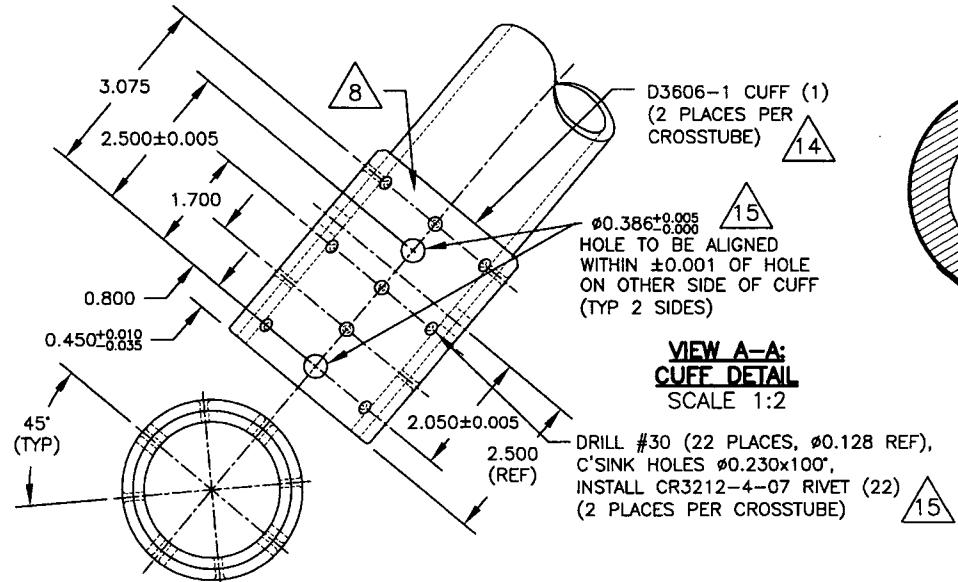
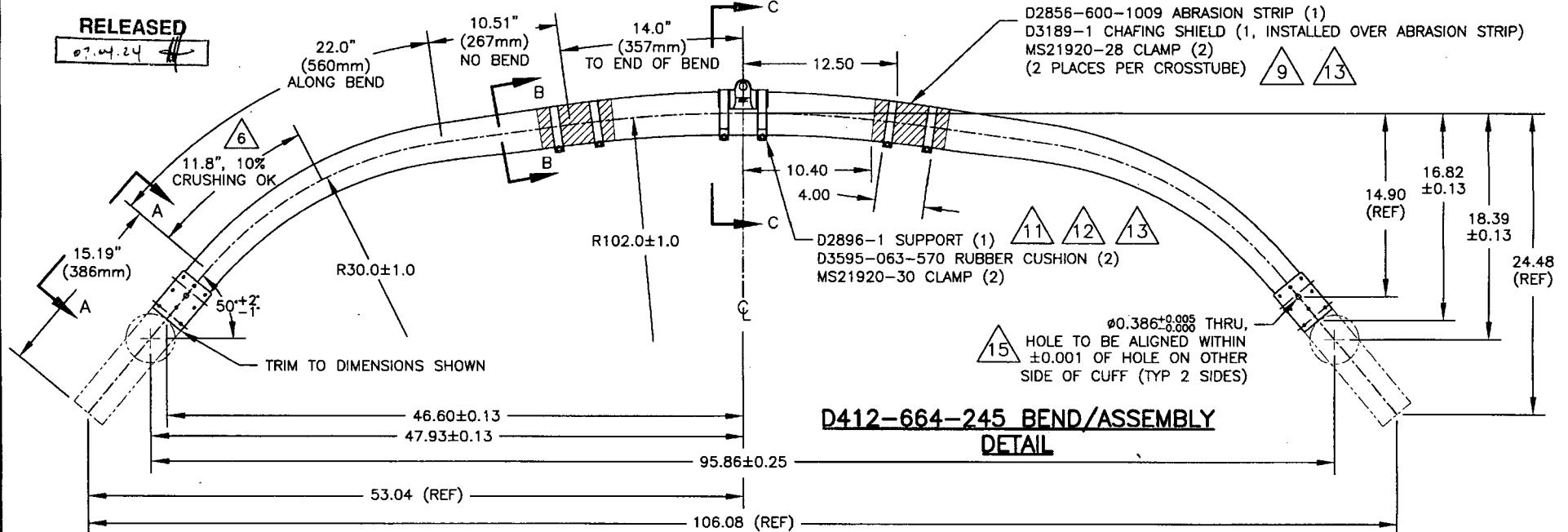
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

RELEASED

07.04.24



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DESIGN

97

DRAWN BY

DART

DART AEROSPACE LTD.

HAMILTON, ONTARIO, CANADA

CHECKED

97

APPROVED

97

DRAWING NO.

D412-664-245

REV. C

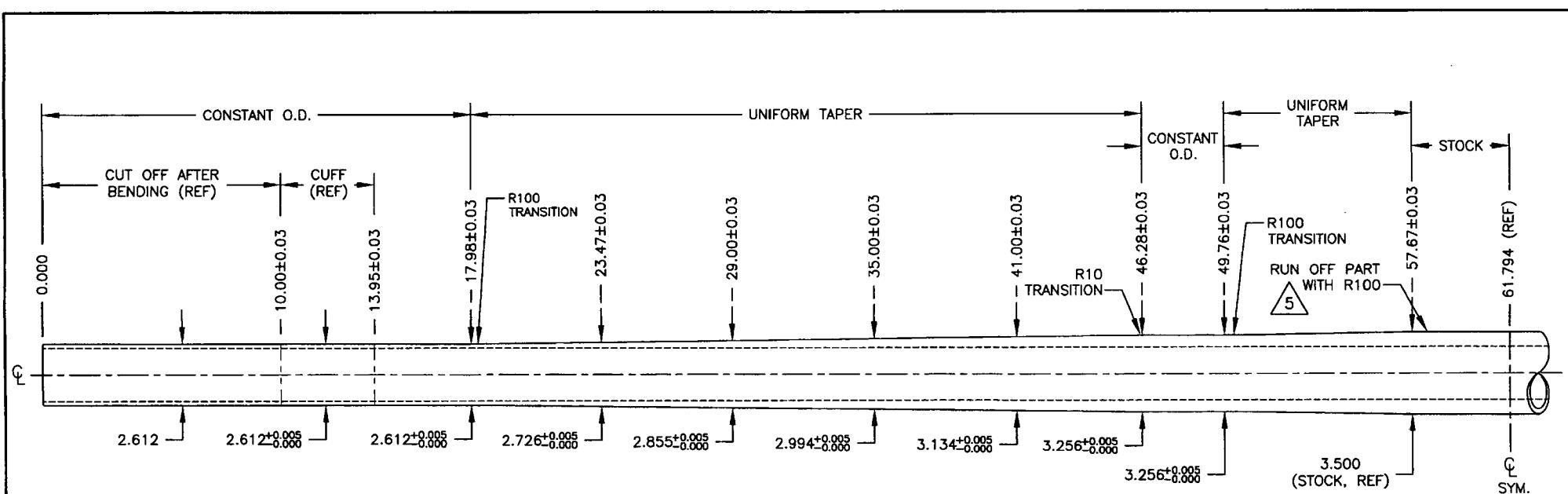
SHEET 2 OF 3

DATE

07.03.29

TITLE

CROSSTUBE (412 LOW-NARROW AFT)



D412-664-245 MACHINING DETAIL

RELEASED

07.04.19

DESIGN	DRAWN BY	DART	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED		DRAWING NO. D412-664-245 REV. C SHEET 3 OF 3
DATE 07.03.29			TITLE CROSSTUBE (412 LOW-NARROW AFT) SCALE 1:4

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LIQUID PENETRANT TEST REPORT

P - 1254 1

CLIENT	DART AEROSPACE	DATE	FEB 22 2008	PAGE	1	OF 1
ATTENTION	LINDA LACELLE	ACUREN JOB NO.	188 08 1254	TIME	AM <input type="checkbox"/>	PM <input type="checkbox"/>
ADDRESS	1270 ABERDEEN ST	PO/WO NO.				
	HAWKESBURY, ONT.	WORK LOCATION	HAWKESBURY			
PROJECT	LOW NARROW AFT X TUBE 412, HIGH AFT X TUBE 412, 212/205 HIGH FED X TUBES	ACCEPTANCE STD.	ASTM 1417/QSI-038	REV./DATE	2005	
ITEM(S) EXAMINED	JOB #'S 412-37701, 37178, 9,80. 212/205-37272, 3.					

JOB DESCRIPTION	PROCEDURE NO. LT-0002 REV./DATE	TECHNIQUE NO. LT-TECH2 REV./DATE
'PART NO. D412664205/D412664203/D212664101	MATERIAL ALODINED ALUM.	THICKNESS
SCOPE WET FLOURESCENT LIQUID PENETRANT INSPECTION CARRIED OUT ON 100% EXTERNAL SURFACE		

TEST DETAILS						
METHOD	<input checked="" type="checkbox"/> FLUORESCENT	<input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH	<input type="checkbox"/> SOLVENT REMOVABLE	<input type="checkbox"/> POST EMULSIFIED	
FAMILY BRAND	MAGNAFLUX		BLACK LGHT8171	<input type="checkbox"/> OUTPUT > 1000 μ W/CM ²	<input type="checkbox"/> AMBIENT < 2 fc	
PENETRANT ZL67	MINIMUM DWELL TIME	45 MIN.	LIGHTING EQUIP.	<input type="checkbox"/> FLASHLIGHT	<input type="checkbox"/> TROUBLELIGHT	<input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER H2O	MINIMUM DRY TIME	>10 MIN.	OTHER	CAL FEB 12 08		
DEVELOPER SKDS2	MINIMUM DWELL TIME	10 MIN.	LIGHT METER S/N	CAL DUE DATE		
DEVELOPER TYPE	<input checked="" type="checkbox"/> NON AQUEOUS	<input type="checkbox"/> AQUEOUS	<input type="checkbox"/> DRY			
TEST SURFACE <i>NA</i>						
SURFACE CONDITION	<input type="checkbox"/> AS GROUND	<input checked="" type="checkbox"/> AS WELDED	<input type="checkbox"/> MACHINED	<input type="checkbox"/> SHOT BLASTED	<input checked="" type="checkbox"/> CLEAN BARE METAL	
SURFACE TEMPERATURE	< -4°C/ 20°F		< -4°C/ 20°F TO 10°C/50°F	<input type="checkbox"/> 10°C/50°F TO 52°C/125°F	<input type="checkbox"/> > 52°C/125°F	
RESULTS-	<input type="checkbox"/> METRIC <input checked="" type="checkbox"/> IMPERIAL					

FLUORESCENT LIQUID PENETRANT INSPECTION

CARRIED OUT ON 100% EXTERNAL

SURFACE ON:

412 LOW NARROW AFT X TUBE JOB# *37701*

412 HIGH AFT X TUBE JOB#S: 37178, 9,80

212/205 HIGH FED X TUBE JOB#S: 37272, 3.

RESULTS: NO INDICATION OF DEFECTS.

ITEMS ACCEPTABLE TO STANDARD

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner operator and the owner operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE	<i>Hewett</i>		PRINT	SIGNATURE	DTR #	E 21516
TECHNICIAN (SIGNATURE):					REPORT	
NAME (PRINT):	JASON HEWETT	1 ST TECHNICIAN		2 ND TECHNICIAN	REVIEWED BY:	
					NAME	INITIALS
CGSB LEVEL	2	SNT LEVEL		CGSB LEVEL	SNT LEVEL	
CGSB REG. NO	6156			CGSB REG. NO		

WHITE - CLIENT COPY

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PINK - TECHNICIAN COPY

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